

Serial No. 10/084,382

NIT-177-02

REMARKS

The Applicants request reconsideration of the rejection.

Claims 26-41 are pending.

The Applicants request acknowledgement of the claim for priority in this case. The priority document was filed at the International Phase of the parent case, U.S. Serial No. 09/503,739.

Claims 26 and 28-33 were rejected under 35 U.S.C. § 102(e) as being anticipated by Tomaru et al U.S. Patent No. 6,229,835 (Tomaru). The Applicants request withdrawal of this rejection, noting that Tomaru '835 is not available as prior art under 35 U.S.C. § 102(e) because the present application and the patent have identity of inventorship. Section 102(e), of course, is directed to prior art patented "by another".

Claims 27 and 34-41 were rejected under 35 U.S.C. § 102(e) as being anticipated by Weingarten et al et al U.S. Patent No. 5,987,049 (Weingarten).

In Weingarten, the Examiner finds elements corresponding to the claimed laser cavity, pumping light source, dichroic concave mirror, and focusing lens. With respect to the important limitation that the focusing lens is tilted with respect to the optical axis of the pumping light so that the focusing point of the pumping light in a sagittal plane and

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that in a tangential plane in the gain crystal of the laser cavity at least approximately coincide with the focusing points in the respective planes in the gain crystal in the cavity mode, the Examiner finds no corresponding disclosure in Weingarten. However, the Examiner finds that Weingarten "inherently" discloses this feature as "essentially result[ing] from the use or application of a focusing point, a focal length of the focusing lens having a plano-convex shape, a focal length of the focusing lens for a tangential plane, and an ABCD matrix from an exit plane of the pumping light source to an arbitrary plane inside the gain crystal."

Respectfully, however, the Examiner finds that the optimizing features that advance the present invention from the prior art are those that essentially result from the ineffective prior art structure. As set forth on page 2 of the specification, for example, the prior art has not known to generally optimize the overlap between the cavity mode and the pumping light beam in any arbitrary solid-state laser. The present inventors are the first to theoretically determine the tilting angle of the focusing lens which is suitable in any arbitrary solid-state laser. In accordance with the findings of the present inventors, astigmatism caused by the gain crystal or a concave lens in the optical system is compensated

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by tilting the focusing lens about the axis of the pumping light so that the focusing point of the pumping light in the sagittal plane and that in the tangential plane in the gain crystal at least approximately coincide with the focusing points in the respective planes in the gain crystal in the cavity mode. Absent a positive teaching in the prior art for this inventive feature, the Applicants submit that no "inherency" can be asserted.

In other words, absent the teachings of the present invention, one reviewing the disclosure of Weingarten does not know how to position the focusing lens or lenses so as to have the desired tilt, compensating for the astigmatism problem. Providing and claiming this feature, the Applicants are entitled to a patent on the feature unless the prior art teaches or renders the feature obvious. Respectfully, the record does not show any such teaching.

If a fee or additional fee is required, the Commissioner is hereby authorized to charge any fee or additional fee that may be required and credit any excess to Deposit Account No. 50-1417.

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In view of the foregoing remarks, the Applicants request reconsideration of the rejection and allowance of the claims.

Respectfully submitted,

  
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